Resection rectopexy for external rectal prolapse reduces constipation and anal incontinence

Running title: Outcome after resection rectopexy for prolapse

E Johnson[1], A Stangeland[2], H-O Johannessen[1], E Carlsen[1]

[1]Department of Gastroenterological Surgery, Ulleval University Hospital, Oslo, Norway, [2]University of Oslo, Oslo, Norway

Correspondence: Egil Johnson
Department of Gastroenterological Surgery
Ulleval University Hospital
Kirkeveien 166
N-0407 Oslo, Norway
E-mail: egil.johnson@ulleval.no; egil.johnson@medisin.uio.no

Abstract

Background and aims: The main aim was to examine constipation and anal incontinence in patients before and after resection for external rectal prolapse.

Material and methods: Twenty patients had ligament preserving suture rectopexy and sigmoid resection (resection rectopexy) for external rectal prolapse by laparoscopic (n=15) or open (n=5) technique during 2001-2005. They were prospectively evaluated for constipation and anal incontinence using validated incontinence and KESS-constipation scores.

Results and conclusions: Constipation score was significantly reduced from mean 7.7 (5.4 – 9.9) to 4.5 (2.5 – 6.4) after median 4 months (1 – 19) and to 4.3 (2.2 6.3) after median 17 months (4 – 51). Six and four patients were constipated preoperatively and 17 months postoperatively, respectively. The four symptoms feeling incomplete evacuation of stool, minutes in lavatory per attempt, use of enemas/digitation and painful evacuation effort were significantly reduced, whilst stool consistency increased. Fourteen patiens (70%) had anal incontinence. Corresponding and significant reduction in their scores were from mean 12.5 (9.4 – 15.5) to 5.1 (2.1 –8.1) and to 3.6 (1.3 – 5.9). Incontinence was improved in 13 and unaltered in one patient(s). Two patients with worse outcome had increased stool consistency and constipation scores. Resection rectopexy for rectal prolapse reduced anal incontinence and constipation.

Key words: Constipation, incontinence, external rectal prolapse

Introduction

External rectal prolapse is a protrusion beyond the anal canal of all layers of the rectal wall. It may protrude permanently or become manifest upon increased abdominal pressure, most frequently by straning at defecation. Allthough perineal procedures ad modum Delorme or Altemeier may be used for this condition in the elderly (1, 2), transabdominal rectopexy with or without sigmoid resection is the most commonly used operation. An unresolved issue is to what degree the bothersome symptom of constipation is influenced by rectopexy (3). Preservation of the lateral ligaments (4) and resection of redundant sigmoid loop (5,6) have been reported to reduce constipation after operation.

However, the interpretation of the results have been hampered by lack of uniform criteria for defining the concept of constipation (7-10). Examples are hard stool consistency, less than two bowel actions per week, incomplete evacuation of stool and delayed colonic transit time. Recently, constipation has been more precisely classified into ten different and graded symptoms of the KESS (Knowles-Eccersley-Scott-Symptom questionnaire) score (11). Using this score, we have demonstrated that patients with internal rectal intussusception improves constipation, including incomplete evacution of stool, after resection rectopexy with suture (12).

The aim of this prospective study was to evaluate constipation in patients with external rectal prolapse before and after this surgical procedure. In addition, anal incontinence was carefully examined by a newly developed incontinence score which includes urgency and use of constipating medicines (13).

Material and methods

Twenty-one patients with external rectal prolapse were operated on by suture rectopexy and sigmoid resection (resection rectopexy) between October 2001 and September 2005. One patient was excluded because of persisting prolapse after operation. The remaining 20 patients were included in the study (Table 1). The external rectal prolapse was confirmed by evacuation defaecography in 16 of the patients. Concomitant findings by evacuation proctography were rectocele in three patients and enterocele, sigmoidocele and incontinence in one patient each. The size of the prolapse, as evaluated by clinical examination in the supine position, was less than 5 cm in 18 patiens and emerged exclusively after increase of abdominal pressure by straining. In two patients the prolapse was manifest and less than 10 cm and 15 cm, respectively. Colonic transit time (14) measured in one patient preoperatively excluded the assumption of slow transit. Five patients had been operated on; hysterectomy (n=2), cystic ovary (n=1), gastrooesophageal reflux (n=1), antesuspensio uteri (n=1). Two patients had been anorexic. Postoperatively, removal of the external prolapse was also confirmed in 12 patients by evacuation proctography. Additional postoperative findings in three patients were reduced rectal emptying, reduced rectal motility and anal incontinence, respectively.

The patients were examined in the outpatient clinic before (n=20) and median four months (Table 1) after the operation (n=19). Symptoms on constipation and anal incontinence were prospectively answered by the patient in collaboration with one of two consultants (EJ or HOJ) in Gastroenterology, of whom at least one participated in all the operations. One patient was postoperatively exclusively evaluated by telephone interview and mail. In addition, the patients (n=20) were evaluated a

second time postoperatively after a longer follow up of median 17 months (Table 1) by a telephone interview performed by a medical student, otherwise unfamiliar with these patients. The validated KESS questionnaire [11] designed to diagnose constipation (Table 2) was used. The total KESS score is the sum of the scores for each question with a maximal possible score of 39 points. Using a cut off criterion of at least 10 points, the KESS score discriminates between constipated patients and healthy controls with a sensitivity of 100% (95% confidence interval (CI) 95 to100 %) and a specificity of 100 per cent (95% CI 63 to100%). This score with a maximum of 35 points, after omitting the question on duration of symptoms, was used to monitor the effect of resection rectopexy.

For assessment of severety of fecal incontinence a validated and newly developed incontinence score (3) was used, which also takes into consideration use of antidiarrhoeal drugs and accounts for fecal urgency. Perfect continence to total incontinence are represented by a minum score of 0 to a maximum score of 24 points, respectively. Deterioration or improvement of score required at least ±2 points. The patients were also asked about their opinion of the outcome of the treatment being differentiated into much worse, worse, unaltered, better or excellent.

Surgical procedure

The operation was done laparoscopically in 15 patients and by laparotomy in 5 patients as described (12). Briefly, the rectum was mobilised posteriorly in the mesorectal plane to the tip of coccyx. Anteriorly the dissection was kept close to the rectal wall to the junction of the upper and middle third of vagina or to the seminal vesicles. The lateral ligaments (> 2/3) were preserved in order to avoid damage to autonomic nerves from the inferior hypogastric plexus that may play a role for rectal

motility. The mesorectum was fixed loosely in the midline posteriorly with one or usually two absorbable sutures to the presacral fascia 2 and 3 cm below the promontory. It aimed at avoiding tension on the rectum, which followed the sacral curve. A redundant sigmoid usually of 10 to 30 cm was resected in order to avoid a pelvic sigmoideocele with reduced peristalsis. In all patients the remaining sigmoid was like straight tube anastomosed to rectum end-to-end by a stapling in the laparoscopically-assisted operations and hand-sewn with one continuous seromuscular suture in the open operations. No laparoscopically-assisted operation was converted to an open procedure. The reasons for choosing an open operation were in four cases limited time in the theatre and/or lack of a qualified assistant for the laparoscopic operation. In one of these patients an open operation also was preferable because of extensive perirectal fibrosis in a man with a large habitual prolapse for more than 20 years. An open operation was chosen in a fifth case due to a descending uterus that needed a concomitant antesuspensio uteri.

Statististical analysis

Wilcoxon signed rank test was used to compare changes in incontinence score, and the KESS score for each individual symptom or for the total score, as a consequence of treatment. A two-tailed *p* value was chosen. Calculations were performed using GraphPad Prism version 3.0 (San Diego, Calif., USA). Probabilities of less than 0.05 were considered significant.

Results

There was no conversion from laparoscopic to open resection rectopexy. The median operation time (range) in minutes for the fifteen laparoscopic and five open procedures were 200 (153 – 320) and 132 (127 – 195) (p = 0.020), respectively.

Morbidity and recurrence

Five patients (25%) had complications. One patient developed a deep wound infection in the rectus muscle which needed reoperaton by drainage. Four patients had complications after laparoscopic operation; bladder perforation in one which was sutured by laparoscopic technique, wound infection in three and wound hematoma in one patient(s), respectively.

An 81-year-old woman reported a recurrent habitual external prolapse (5%) about 1 1/2 years after open operation.

Constipation

A significant reduction of overall constipation score was demonstrated in the twenty patients undergoing operation for external rectal prolapse from mean 7.7 (95% CI 5.4 – 9.9) to 4.5 (2.5 – 6.4) (p = 0.034) and 4.3 (2.2 – 6.3) (p = 0.020) when evaluated after median 4 months and median 17 months (Table 1), respectively. Using a score of at least 10 as a criterion for constipation, the number of patients being constipated preoperatively and after 17 months postoperatively were 6 (30%) and 4 (20%), respectively. The score was improved in fourteen patients (70%), unaltered in three (15%) and increased in three patients (15%), respectively. Four patients (20%) were relieved from constipation (score < 10) and two patients (10%)

became constipated after operation. One patient, only, had an initial score of 0. Four of the 10 symptoms of the KESS score was significantly reduced (Table 3); feeling incomplete evacuation of stool, minutes in lavatory per attempt, use of enemas/digitation and painful evacuation effort. On the other hand, there was an increased stool consistency as a result of operation, whilst the remaining five symptoms were unaltered. Of the six patients (30%) that developed increased stool consistency, constipation was evident preoperatively in two patients and postoperatively in four patients, respectively.

Anal incontinence

After operation there was a significant reduction in overall incontinence score in the fourteen patients (70%) with anal incontinence from mean 12.5 (9.4 – 15.5) to 5.1 (2.1 – 8.1) ($p = 0.004$) after median 4 months and with a further reduction to 3.6 (1.3 – 5.9) ($p = 0.000$) after median 17 months. At 4 months this score was reduced in twelve patients (86%) and increased in two patients (14%). At 17 months this score was reduced in thirteen patients (93%) and unaltered in one patient (7%). The symptomatic improvement of anal incontinence 17 months after operation is detailed in Table 4.

Patients' satisfaction

At final evaluation eighteen of the patients (90%) reported good (n=12) or excellent results (n=6) whereas two patients (10%) felt worse and much worse, respectively. The former patient developed reduction of incontinence score from 13 to 7 and an increase in constipation score from 2 to 13. The latter patient who also had reduced

rectal motility at evacuation proctography, scored invariably 5 at incontinence and from 5 to 12 concerning constipation.

Discussion

The primary finding of this study is the detailed description of the improvement of constipation after resection rectopexy in patients with external rectal prolapse. Likewise, the improvement of anal continence in these patients was thoroughly examined.

The broad and graded KESS score for constipation based on ten symptoms has two obvious advantages. It makes it possible to both define the number of constipated patients and also monitor prospective alterations in the degree of this serious symptom. We find by using ligament- and thereby also nerve preserving (4) resection rectopexy with suture, both a reduction of overall constipation score and number of constipated patients from initially 30 to 20%. The four symptoms feeling incomplete evacuation of stool, minutes in lavatory per attempt, use of enemas/digitation and painful evacuation effort were reduced, whilst an increased stool consistency developed as a result of operation (Table 3). Increase in the latter symptom is in agreement with the literature (2, 3), and both patients that became constipated had increased stool consistency. Moreover, one that became constipated had reduced rectal emptying at postoperative proctography. The other patient had had a previous hysterectomy, that may contribute to increased constipation after surgery for rectal prolapse (15). In addition, the reduced mobility of colon demonstrated after surgical mobilisation of rectum (16) can also contribute to increased constipation after resection rectopexy (1, 3). Interestingly, both patients who felt worse had increased constipation scores. In general, the symptoms that improved in these patients were related to the elimination of the prolapse, whilst symptoms associated with

colonic motility were either worsened (stool consistency) or unaltered (Table 3).

In a similar study (12), using resection rectopexy in patients with internal rectal intussusception, we found that pre- and postoperative constipation scores were considerably higher than for our patients with external rectal prolapse (16.5 versus 7.7 and 7.7 versus 4.3, respectively). This implies that constipation is much more pronounced in patients with internal rectal intussusception versus external rectal prolapse (91 versus 30%). However, resection rectopexy had a profound effect on the improvement of constipation for patients with internal rectal intussusception as all the ten symptoms of the KESS score was reduced. Interestingly, for both related conditions feeling of incomplete evacuation of stool was the most frequently occuring symptom.

The symptomatic improvement in constipation was already established at first evaluation median 4 months after operation since there was no further improvement or deterioration in constipation score at second evaluation performed after 17 months. Moreover, this second evaluation was performed by a more unbiased person who was a medical student not involved in the selection and treatment of these patients.

A majority of 70% of the patients had impaired anal continence which is relatively prevalent (2, 9, 17). This may be owing to application of an incontinence score which also includes the state of fecal urgency and use of constipating medicines (13). As could be expected, anal incontinence strongly improved (Table 4) by removal of the prolapse which eliminates dilatation of the anal sphincter muscles. Recovery of the internal anal sphincter as evaluated by electromyogram and anal manometry, has been demonstrated after rectopexy for rectal prolapse (18, 19). Anal incontinence still continued to improve from first to second evaluation. Accordingly, our study support that incontinence demanded more time for resolution

than constipation.

The perioperative morbidity and a short term recurrence rate of 5% was comparable to similar reports (3, 20, 21).

We also found (22, 23) a significantly longer operation time for the laparoscopic procedure compared with the open procedure. With experience we expect a further reduction of the operation time for the laparoscopic approach (24), which is our preferred method in these patients.

In conclusion, by using a precise definiton of constipation we were able to identify and evaluate this crucial symptom in patients with external rectal prolapse treated with ligament preserving resection rectopexy. In order to compare results from different studies, we advocate use of this constipation score.

References

1. Eu K-W, Seow-Choen F. Functional problems in adult rectal prolapse and controversies in surgical treatment. Br J Surg 1997; 84: 904-911.
2. Farouk R, Duthie GS. Rectal prolapse and rectal invagination. Eur J Surg 1998; 164: 323-332.
3 . Brazzelli M, Bachoo P, Grant A. Surgery for complete rectal prolapse in adults (Cochrane review). In: The Cochrane Library, Issue 2, 2004. Chichester, UK: John Wiley & Sons, Ltd.
4 . Speakman CTM, Madden MV, Nicholls RJ, Kamm MA. Lateral ligament division during rectopexy causes constipation but prevents recurrence: results of a prospective randomized study. Br J Surg 1991; 78: 1431-1433.
5. Luukkonen P, Mikkonen U, Järvinen H. Abdominal rectopexy with sigmoidectomy vs. rectopexy alone for rectal prolapse: A prospective, randomized study. Int J Colorect Dis 1992; 7: 219-222.
6. McKee RF, Lauder JC, Poon FW, Aitchison MA, Finlay IG. A prospective randomized study of abdominal rectopexy with and without sigmoidectomy in rectal prolapse. Gynecol Obstet 1992; 174: 145-148.
7. Ashraf W, Park F, Lof J, Quigley Eamonn MM. An examination of the reliability of reported stool frequency in the diagnosis of idiopathic constipation. Am J Gastroenterol 1996; 1: 26-32.
8. Karasick S, Ehrlich SM. Is constipation a disorder of defecation or impaired motility? Distinction based on defecography and colonic transit studies. *AJR* 1996; 166: 63-66.

9. Madoff RD, Williams JG, Wong WD, Rothenberger DA, Goldberg SM. Long-term functional results of colon resection and rectopexy for overt rectal prolapse. Am J Gastroenterol 1992; 87: 101-104.
10. Sarna SK. Physiology and pathophysiology of colonic motor activity. Part two of two. Dig Dis Sci 1991; 7: 998-1018.
11. Knowles CH, Eccersley AJ, Scott SM, Walker SM. Linear discriminant analysis of symptoms in patients with chronic constipation.Validation of a new scoring system (KESS). Dis Colon Rectum 2000; 43: 1419-1426.
12. Johnson E, Carlsen E, Mjåland O, Drolsum A. Resection rectopexy for internal rectal intussusception reduces constipation and incomplete evauation of stool. Eur J Surg Suppl. 2003; 588: 51-56.
13. Vaizey CJ, Carapeti E, Cahill JA, Kamm MA. Prospective comparison of fecal incontinence grading systems. Gut 1999; 44: 77-80.
14. Abrahamsson H, Antov S, Bosaeus I. Gastrointestinal and colonic segmental transit time evaluated by a single abdominal X-ray in healthy subjects and constipated patients. Scand J Gastroenterol 1988; 23 (suppl 152): 72-80.
15. Barham K, Collopy BT. Posthysterectomy rectal and vaginal prolapse, a commonly overlooked problem. Aust NZ Obstet Gynaecol 1993; 33: 300-303.
16. Mollen RMHG, Kuijpers JHC, van Hoek F. Effects of rectal mobilization and lateral ligaments division on colonic and anorectal function. Dis Colon Rectum 2000; 43: 1283-1287.
17. Schultz I, Mellgren A, Dolk A, Johansson C, Holmström B. Long-term results and functional outcome after Ripstein rectopexy. Dis Colon Rectum 2000; 43: 35-43.
18. Farouk R, Duthie GS, Bartolo DCC, MacGregor AB. Restoration of

continence following rectopexy for rectal prolapse and recovery of the internal anal sphincter electromyogram. Br J Surg 1992; 79: 439-440.

19. Schultz I, Mellgren A, Dolk A, Johansson C, Holmström B. Continence is improved after the Ripstein rectopexy. Different mechanisms in rectal prolapse and rectal intussusception? Dis Colon Rectum 1996; 39: 103-109.
20. Lechaux D, Trebuchet G, Siproudhis L, Campion JP. Laparoscopic rectopexy for full-thickness rectal prolapse. A single-institution retrospective study evaluating surgical outcome. Surg Endosc 2005; 19: 514-518.
21. Raftopoulos MD, Senagore AJ, Di Giuro G, Bergamaschi R. For the rectal prolapse recurrence study group. Recurence rates after abdominal surgery for complete rectal prolapse: A multicenter pooled analysis of 643 individual patient data. Dis Colon Rectum 2005; 48: 1200-1206.
22. Baker R, Senagore AJ, Luchtefeld MA. Laparoscopic-assisted vs. open resection. Rectopexy offers excellent results. Dis Colon Rectum 1995; 38: 199-201.
23. Kairaluoma MV, Viljakka MT, Kellokumpu IH. Open vs. laparoscopic surgery for rectal prolapse. A case-controlled study assessing short-term outcome. Dis Colon Rectum 2003; 46: 353-360.
24. Solomon MJ, Young CJ, Eyers AA, Roberts RA. Randomized clinical trial of laparoscopic *versus* open abdominal rectopexy for recta prolapse. Br J Surg 2002; 89: 35-39.

Table 1 Twenty patients with external rectal prolapse.

Data are median (range) except where otherwise stated.

Variable	
Duration of symptoms (years)	7 (2-25)
Number of women/men	15/5
Age (years)	51 (15-79)
Follow up (months) at first evaluation	4 (1-19)
Follow up at second evaluation	17 (4-51)

Table 2 The Knowles-Eccersley-Scott-Symptom (KESS) questionnaire score

1. Duration of constipation

0-18 months	0
18 months to 5 years	1
5-10 years	2
10-20 years	3
> 20 years (or all life)	4

2. Laxative use

None	0
Short duration	1
Long duration	2
Long duration, ineffective	3

3. Frequency of bowel movement
(using current therapy)

1-2 times/1-2 days	0
2 or less times/week	1
Less than once per week	2
Less than once per 2 weeks	3

4. Unsuccessful evacuatory attempts

Never/rarely	0
Occasionally	1
Usually	2
Always=manual evacuation	3

5. Feeling incomplete evacuation

Never	0
Rarely	1
Occasionally	2
Usually	3
Always	4

6. Abdominal pain

Never	0
Rarely	1
Occasionally	2
Usually	3
Always	4

7. Bloating

Never	0
Perceived by patient only	1
Visible to others	2
Severe causing satiety or nausea	3
Severe with vomiting	4

8. Enemas/Digitation

None	0
Enemata/suppositories occasionally	1
Enemata/suppositories regular	2
Manual evacuation occasionally	3
Manual evacuation always	4

9. Time taken

(minutes in lavatory/attempt)

< 5 minutes	0
5 – 10 minutes	1
10 – 30 minutes	2
> 30 minutes	3

10. Difficulty evacuating
(causing a painful evacuation effort)

Never	0
Rarely	1
Occasionally	2
Usually	3
Always	4

11. Stool consistency
(without laxatives)

Soft/loose/normal	0
Occasionally hard	1
Always hard	2
Always hard, usually pellet like	3

Key: Rarely = < 25% of time
Occasionally = 25-50% of the time
Usually = > 50% of the time

Table 3 Alteration in symptoms using the KESS score as a consequence of operation for external rectal prolapse in 20 patients at second evaluation (median 17 months). All patients were evaluated for each symptom. The score is given as mean (95% confidence interval).

Variable	Number of patients Score Preoperatively	Postoperatively	P-value
Feeling incomplete evacuation	17 2.40 (1.68 – 3.11)	12 1.20 (0.60 – 1.80)	0.018
Minutes in lavatory/attempt	12 1.25 (0.70 – 1.79)	8 0.60 (0.24 – 0.95)	0.021
Enemas/Digitation	8 0.95 (0.24 – 1.65)	2 0.10 (-0.04 – 0.24)	0.037
Painful evacuation effort	7 0.80 (0.16 – 1.43)	3 0.15 (-0.02 - 0.32)	0.046
Stool consistency	3 0.20 (-0.04 – 0.44)	7 0.70 (0.17 – 1.22)	0.046
Abdominal pain	5 0.25 (0.04 – 0.45)	5 0.30 (0.04 - 0.45)	> 0.999
Bloating	13 0.80 (0.44 – 1.15)	10 0.75 (0.35 – 1.14)	0.820
Laxative use	5 0.40 (0.04 – 0.75)	3 0.20 (-0.04 – 0.44)	0.312
Unsuccessful evacuatory attempts	6 0.45 (0.06 – 083)	5 0.40 (0.04 – 0.75)	> 0.999
Frequency of bowel movement	2 0.10 (-0.04 – 0.24)	2 0.15 (-0.07 - 0.37)	ND
Total score	7.7 (5.4 – 9.9)	4.3 (2.2 – 6.3)	0.020

ND=not determined due to too few observations necessary for statistical analysis.

Table 4 Number of patients (n=14) with specified symptoms of anal incontinence preoperatively (left) and postoperatively (right) at second evaluation (median 17 months).

	Never	Rarely	Sometimes	Weekly	Daily
Incontinence for solid stool	7 - 11	1 - 1	2 - 0	2 - 2	2 - 0
Incontinence for liquid stool	1 - 8	1 - 2	3 - 3	3 - 1	6 - 0
Incontinence for gas	3 - 8	1 - 0	3 -3	2 - 0	5 - 3
Alteration in lifestyle	3 - 12	0 - 0	0 - 0	4 - 1	7 - 1

	No	Yes
Need to wear a pad or plug	9 - 14	5 - 0
Taking constipating medicines	13 - 13	1 - 1
Able to delay defecation for 15 min	7 - 4	7 -10

TILLEGG TIL ARTIKKEL

Aimée Stangeland
Stud. med.
Universitetet i Oslo

Reseksjonsrektopeksi for eksternt rectumprolaps reduserer obstipasjon og anal inkontinens.

Innhold

Innledning
Artikkelen ”Resection rectopexy for eksternal rectal prolapse reduces constipation and anal incontinence”, er antatt i Scandinavian journal of Surgery for utgivelse i 2007. Hovedforfatter er Dr. Egil Johnson, og medforfattere er Stud.med. Aimée Stangeland, Dr. H-O. Johannesen og Dr. E. Carlsen.

Artikkelen omfatter et klinisk studium av 20 pasienter med diagnostisert eksternt rectumprolaps. Hovedformålet med operasjonen er å fjerne selve rectumprolapset. Imidlertid er det også viktig å vurdere om andre symptomer som grad av obstipasjon og anal inkontinens bedres eller forverres som følge av operasjonen. Forfatterne ønsker med denne artikkelen å belyse de fordeler som gis ved å benytte entydige og internasjonalt validerte symptomgraderings-skjema for disse to sentrale symptomer.

Tidligere undersøkelser har vist at ved å gjøre en transabdominal rektopeksi med sigmoideumreseksjon og preservasjon av laterale ligamenter kan man redusere den postoperative obstipasjonen. Problemet har imidlertid vært at en entydig definisjon av begrepet obstipasjon ikke har foreligget før inntil år 2000 med introduksjon av det validerte såkalte KESS-spørreskjema (4). Tilsvarende har man også benyttet seg av et validert skjema for vurdering av anal inkontinens (6). Forannevnte er resultater som er relevant for pasienter å vite.

Tidligere er det publisert en artikkel om internt rectumprolaps, der også KESS-skjemaet er benyttet. I den artikkelen ble det vist at symptomer som obstipasjon og følelse av ufullstendig tømming ble forbedret med en rektopeksi med sigmoideumreseksjon (2).

Graderingsmåte
Før KESS-skjemaet kom, var det opp til den enkelte lege å gradere pasientens symptomer og plager. Mangelen på et entydig graderingsverktøy gjorde det vanskeligere, utover at prolapset ble fjernet, å se ytterligere fordeler med operasjon.
KESS-skjemaet består av 11 spørsmål, der varigheten av symptomene er inkludert. Men når man sammenligner resultatene er dette spørsmålet utelatt. Maksimal oppnåelig poengsum er 35 poeng. For å kunne kalle det en obstipasjon er det nødvendig med en sum på minst 10 poeng. Metoden har en rapportert sensitivitet og spesifisitet for å definere obstipasjon på 100% (4). KESS er en forkortelse for Knowles-Eccersley-Scott symptom score.
I miljøene var det et behov for en metode å diagnostisere anorektale lidelser, som kunne sammenfatte flere symptomer og predikere sannsynlighet for patologi. Det var spesielt vanskelig å vurdere pasienter som hadde en blandingslidelse. I vår artikkel ble skjemaet benyttet på bakgrunn av at det var en helt ny måte å diagnostisere obstipasjon på, samt at det var det eneste kjente validerte graderingsverktøyet.
Pasientene ble evaluert preoperativt og postoperativt, samt etter en lengre tid. Ved alle evalueringer ble KESS-spørreskjemaet benyttet.

Vi benyttet også et nytt validert inkontinens-skjema (6). Maksimum oppnåelig poengsum er 24 poeng, som representerer total inkontinens for luft og avføring, og null poeng er fullstendig kontinens. For å kunne si at det var en endring postoperativt var det nødvendig med en poengforskjell på minst 2 poeng i begge retninger.
Til slutt ble pasientene spurt om hva som var deres helhetlige vurdering postoperativt; mye verre, verre, uforandret, bedre eller helt frisk.

KESS-symptom skjema (4):

1. Varighet av obstipasjon.
2. Bruk av avføringsmidler.
3. Antall avføringer.
4. Mislykket forsøk på tømming av avføring.
5. Følelse av ufullstendig tømming.
6. Abdominalsmerter.
7. Oppblåst i bukhulen.
8. Tarmskylling og/eller bruk av fingre ved avføring.
9. Tid på toalettet ved forsøk på avføring.
10. Vansker ved avføring på grunn av smerter.
11. Avføringens konsistens uten avføringsmiddel.

Inkontinens skåre (6):

1. Lekkasje for
    - Fast avføring.
    - Løs avføring.
    - Luft.

2. Må ta hensyn til hva man skal gjøre.
3. Må bruke bleie.
4. Bruker forstoppende medisin.
5. Kan utsette avføring i 15 min.

Patofysiologi
Eksternt rectumprolaps er en tilstand som oftest ses hos små barn og eldre, og minst 90% av pasientene er kvinner. Mekanismen er en invaginasjon av hele tarmveggen (mucosa og muscularis), som initialt hernierer gjennom bekkenbunnen. Dersom prolapset er utenfor analåpningen foreligger et eksternt prolaps, mens internt rectumprolaps foreligger hvor invaginasjonen er lokalisert til rectumampullen eller analkanalen og således ikke er synlig fra perinealsiden.

Hos barn oppstår dette oftest rundt 2 års alderen og gjerne i sammenheng med obstipasjon som nødvendiggjør potte/toalett-trening. Prolapset retraherers som oftest spontant, uten behov for videre oppfølging og undersøkelse. Barn med dette problemet er tjent med en diett med høyt innhold av fiber, samt at de ikke bør anstrenge seg ved å presse ved toalettbesøk.
Hos eldre er tilstanden ofte mer plagsom, og pasienten må ofte reponere prolapset mekanisk. I starten kommer prolapset kun til syne ved defekasjon, og kalles da habituelt. Ved senere mer uttalt stadium kan det bli permanent eller manifest og er tilstede utenfor analkanalen hele tiden.

En hyppig følge av et slikt prolaps er at pasienten også blir inkontinent for avføring på grunn av en sekundær svekkelse av sfinktermuskulaturen. Dette skjer som følge av en prolaps-mediert dilatasjon av især indre men også ytre anale sfinkter.

Et prolaps kan kompliseres med ulcerasjoner og blødninger fra rectumslimhinnen.

Diagnosen kan stilles på bakgrunn av et synlig prolaps, pasientens symptomer, pressetest og defekografi. Ved et internt prolaps er defekografi nødvendig for å stille diagnosen. Da får pasienten kontrast i rektum, og skal deretter tømme ut kontrasten under røntgen gjennomlysning.
Pasientenes symptomer er obstipasjon, anal inkontinens, smerter, blødning, økt mengde slim, og omtales utførlig under avsnittet om KESS-spørreskjemaet, samt i selve artikkelen (3).

Imidlertid er det essensielt å anerkjenne at pasientens sosiale begrensing er av betydelig karakter. Både med hensyn på lekkasje, synlig prolaps og nødvendighet av å være i nærheten av et toalett. Pasientene er redde for at problemet skal bli synlig for andre, og vil i mange tilfeller legge opp en plan for eventuelle utflukter. De må vite nøyaktig hvor de kan benytte toalettet, og også at det er mulig å komme raskt hjem igjen. Mange føler seg sosialt isolert og oppsøker ikke lenger de miljøer og aktiviteter de tidligere fant glede i.

Hvorfor et slikt prolaps oppstår er usikkert. Spesielt er det at pasientgruppen heller ikke er helt homogen. Denne tilstanden oppstår ikke bare hos eldre med klare svakheter i støttestrukturer, men også hos barn. I tillegg sees rectumprolaps hos unge menn og kvinner som har en normal sterk bekkenbunn og normal funksjon av anale sfinkter, samt hos kvinner som aldri har født. Imidlertid er det trolig en disponerende faktor som skiller seg ut, nemlig svakheter i det pararektale støttevevet. Dessuten disponerer en lang sigmoideum (sigmoideocele) for rectumprolaps ved at å danne en skarp knekk på tarmen vil øke behovet for pasienten å presse på og bruke bukpressen ved toalettbesøk for tømming av avføring. En kjennsgjerning er at rectumprolaps synes å være mer vanlig blant barn og unge som er feil- eller underernært. En forklaring kan være at vevskvaliteten i særlig støttevet rund rectum som sideligamenter og bekkenbunn er redusert, samt at tarmens motilitet endres. Disse forhold kan kanskje bidra til økt sannsynlighet for en invaginasjon av tarmveggen.

Disponerende faktorer

- Svakheter i bekkenbunnen
- Feil- og underernæring
- Tarmsykdom
- Motilitetsproblemer.
- Medfødte abnormaliteter.
- Underliggende psykiatrisk lidelse.

Profylakse
Mange pasienter med moderate plager vil ha god hjelp av å endre matvanene. Et kosthold med mye fiber vil være hensiktsmessig med tanke på tarmmotilitet. Det er et mål å få ned transittiden, altså tiden som bolus faktisk er i tarmen. Ved å korte ned denne vil mindre vann reabsorberes slik at konsistensen blir mykere. Hvis man kan unngå obstipasjon er dette med på å redusere pasientens plager. Et godt kosthold vil ikke kunne redusere et allerede oppstått prolaps, men redusere symptomene. Det er flere gode produkter på markedet for å bedre tarmmotiliteten. Både produkter som øker den osmotiske effekten og gjør avføringen løsere, og bulk-laksantia som dessuten øker avføringens volum kan virke lindrende.
Andre enkle og fremmende tiltak som kan hjelpe pasienten til bedre helse, inkludert redusert depresjon, er mosjon, økning av væskeinntaket og endring av toalettvaner. Slike tiltak kan i noen tifeller føre til at pasienter med internt rectumprolaps kan unngå operasjon.

Kirurgisk behandling:
Når det gjelder kirurgi er det i hovedsak 4 ulike metoder: To av dem går abdominalt, mens de resterende to foretas perinealt (1). Vi benytter en transabdominal operasjonsmetode.

Abdominale operasjoner:
Sutur rektopeksi, der rektum mobiliseres og mesorektum fikseres til promontoriet via den presacrale fascien.
Reseksjonsrektopeksi, der rektum mobiliseres og sutureres på samme måte, men der man også utfører en sigmoideumreseksjon. Dette siste for å forsøke å forhindre den sekundære obstipasjonen som ofte følger etter en slik operasjon. De laterale ligamenter ble i hovedsak bevart for å unngå skade på autonome nerver fra plexus hypogastricus inferior og derved bevare i større grad motiliteten i både rectum og colon (2). Reseksjonsrektopeksi er vår foretrukne metode pga lav residivrate for prolaps (inntil 10%) og bedre funksjonelt resultat sammenlignet med perineale operasjonsmetoder.

Perineale operasjoner:
Delorme operasjon (mest brukt i Storbritannina) og Altemeiers prosedyre (mest brukt i USA), er begge perineale operasjoner (1). Ved Delormes operasjon eksideres rectumslimhinnen mens den muskulære del av rectumveggen sys sammen og reponeres til over anus. Dernest anastomoseres slimhinnen i nivå ved anorektalovergangen. Ved Altemeiers operasjon eller perineal rectumreseksjon reseseres også den muskulære del av rectum slik at alle vegglag fjernes. Som ved Delormes operasjon faller anastomosen i anorectalovergangen, men ved Atlemeiers operasjon inkluderes alle vegglag i anastomosen til forskjell fra Delormes operasjon hvor kun slimhinnen anastomoseres. Fordelen med Altemeiers operasjon i forhold til Delormes operasjon er en mye lavere residivrate (10-20% versus 40-50%) for prolaps, og er derfor vår foretrukne perineale metode hos skrøpelige pasienter som ikke tåler transabdominal operasjon pga høy komorbiditet.

Resultater
Denne undersøkelsen (3) viser en signifikant forbedring av obstipasjon postoperativt når det er brukt en reseksjonsrektopeksi med sigmoideumreseksjon.
Når vi bruker en skåre på minst 10 poeng som kriterium for obstipasjon var seks pasienter obstipert preoperativt, mens kun fire var obstipert postoperativt. Imidlertid er den totale reduksjonen av obstipasjon som symptom redusert fra median 7,7 (95% konfidens intervall 5,4 – 9,9), til 4,5 (2,5 – 6,4) og 4,3 (2,2 – 6,3) etter henholdsvis fire og 17 måneder. Så selv om ikke det var mange som var obstipert preoperativt, var det likevel en total forbedring.
For hele materialet ble skåren forbedret hos 14 pasienter, mens det var to pasienter som ble obstiperte. Dette viser at den nevnte operasjonsmetode faktisk reduserer obstipasjons-symptomer.
Dessuten var det fire av de ti symptomene i KESS-skjemaet som ble signifikant redusert:.

- Følelse av ufullstendig tømming,
- Tid på toalettet,
- Tarmskylling og/eller bruk av fingre ved avføring
- Vansker ved avføring på grunn av smerter.

Derimot ble et symptom forverret, nemlig det forhold at avføringens konsistens ble fastere, som også er forenlig med tidligere studier.

Også resultatene for inkontinens viste en signifikant reduksjon. Maksimal oppnåelig poengsum var 24 poeng, svarende til total inkontinens, og der null poeng svarer til fullstendig kontinens. For at en endring kan være signifikant kreves det en endring på pluss eller minus 2 poeng.
14 av pasientene (70%) hadde som følge av operasjon en signifikant bedring i inkontinens-skåre fra median 12,5 (9,4-15,5) til 5,1 poeng (2,1-8,1)**.** Syv pasienter hadde en skåre over 10 poeng preoperativt, mot 5 pasienter postoperativt. Elleve pasienter hadde en forbedring, to ble verre, mens en hadde ingen endring i inkontinens-symptomer. Det symptomet som ble mest redusert var hvorvidt pasienten måtte ta hensyn til sin inkontinens i hverdagen. Preoperativt svarte tre pasienter mot hele 12 pasienter postoperativt at de ikke trengte å ta hensyn til lidelsen i hverdagen. Resultatene viste altså en median preoperativ poengsum på 12,5 (9,4 – 15,5) poeng, til postoperativt 5,1 (2,1 – 8,1) poeng etter median fire måneder. Dessuten observerte vi at ved å forlenge observasjonstiden til median 17 måneder ble graden av inkontinens ytterligere redusert til kun 3,6 (1,3 – 5,9).

Pasientene ble også bedt om å gradere sin oppfatning av hvorvidt operasjonen hadde vært vellykket ved å besvare et spørsmål angående det totale utfallet. 18 av pasientene svarte at de var enten meget godt fornøyd (n=12) eller fornøyd (n=6), mens kun to pasienter følte seg verre eller mye verre. Den ene av de to pasientene hadde høyere poengsum postoperativt både for obstipasjon og inkontinens og rapporterte om tømningsproblemer, mens den andre pasienten hadde høyere poengsum postoperativt kun for obstipasjon. Inkontinens var signifikant redusert.

Utførelse av oppgaven.
Det ble min oppgave å kontakte pasientene etter et lengre tidsrom postoperativt via telefon eller per brev. Oppfølgingstiden strekker seg fra fire til 51 måneder. Som det fremgår av artikkelen hadde jeg ikke noe annet forhold til pasientene enn det jeg fikk ved denne kontakten. Jeg var upartisk, og hadde ikke noen rolle i selve behandlingen. Jeg hadde som oppgave å gjennomgå KESS-skjemaet med dem, enten over telefon, eller via brev. Svarene ble ført inn i deres journal i tillegg til at jeg samlet alle data i flere tabeller som kan sees i artikkelen. I denne undersøkelsen er det også inkludert et spørreskjema angående inkontinens, og pasientenes egen vurdering av utfallet og konklusjon etter operasjon.

Referanser:

1. Burkitt et. al: Essential surgery. Churchill Livingstone tredje utgave 2003.
2. Johnson, Karlsen, Mjåland og Drolsum. Resection rectopexi for internal rectal intussuseption reduces constipation and incomplete evacuation of stool. European Journal of Surgery Suppl. 2003; 588:51-56.
3. Johnson, Stangeland, Johannesen og Carlsen: Resection rectopexi for external rectal prolapse reduces constipation and anal incontinence. Scandinavian journal of surgery 2007.
4. Knowles CH, Eccersley AJ, Scott SM, Walker SM: Linear discriminant analysis of symptoms in patients with cronic constipation. Validation of a new scoring system (KESS). Diseases of the colon and rectum 2000; 43:1419-1426.
5. Schroeder et al: Basisbog i medicin og kirurgi. Munksgaard Danmark, København 2004.
6. Vaizey CJ, Carapeti E, Cahill JA, Kamm MA. Prospective comparison of fecal incontinence grading systems. Gut 1999; 44:77-80.